

## Depressants

Depressants are drugs that relax or depress activity in the central nervous system. They slow down brain activity and that of other organs. They may also reduce respiration rates and dull emotional responses.

The effect of a depressant varies with the dose level. At low doses they may have little impact. At moderate levels they may induce sedation including depression of emotional responses and the reduction of anxiety. At somewhat larger doses they may induce sleep and at extremely high levels they may result in a coma or death. Some depressants are described as antidepressants because they relieve levels of anxiety and clinical depression.

Depressants fall into a number of different categories.

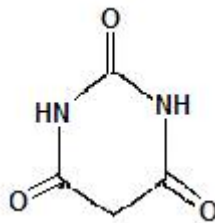
## Tranquilizers

Tranquilizers include alcohol, Valium, **Alprazolam** (Xanax), and Librium. These substances reduce nervous tension but do not induce sleep at normal levels. Valium and Xanax are benzodiazepine tranquilizers and are often prescribed for mild cases of anxiety.

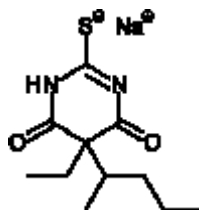
## Sedatives

Sedatives are more potent than tranquilizers but have much of the same effect. Many sedatives are barbiturates. Under normal doses: barbiturates reduce anxiety; reduce respiration, reduce blood pressure, reduce heart rate and reduce rapid eye movement (REM) sleep. In higher doses: barbiturates can actually *increase* some types of behavior and act like a stimulant. These effects may be caused by depression of inhibitory brain circuits. In other words, barbiturates at these doses act to remove inhibitory behavior.

Barbiturates are derivatives of barbituric acid shown below:



One class of barbiturate derivatives is called thiobarbiturates, which contain a sulphur molecule in place of one of the oxygens. The most important member of this class is sodium pentothal, which is used as an intravenous anesthetic from which recovery is rapid and which has the advantage of having very little or no side effects.



Sodium pentothal

Barbiturates can lead to excessive sedation and cause anesthesia, coma and even death. Barbiturate overdoses may occur because the effective dose of the drug is not too far away from the lethal dose.

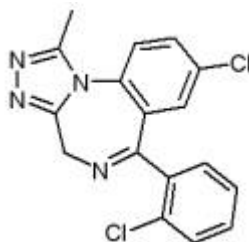
A major problem with barbiturates is that they may lead to tolerance and dependence. Tolerance occurs when a greater and greater amount of the drug is required to get the desired effect. For example, if barbiturates are used to help a

person sleep, over time, a greater dose of the drug will be needed to get the person to sleep. Dependence occurs when a person feels like he or she must use the drug and withdrawal symptoms occur when the person stops using the drug.

## Hypnotics

Hypnotics are a group of depressants that produce sleep. Some barbiturates such as phenobarbital can act as hypnotics at higher doses.

Hypnotics are used for short term treatment of insomnia. Some, such as chloralhydrate ('Heminevrin') can also be used to help agitation and restlessness, as well as to help ease withdrawal symptoms from alcohol. Insomnia is itself not an illness, but it can cause distress and potentially worsen some forms of psychological distress such as mania. Triazolam, sold under the trade name Halcion, is an example of a hypnotic.



Triazolam

Triazolam is a member of the benzodiazepine class of pharmaceuticals that are well known for their depressant activity on the central nervous system. The benzodiazepines are a versatile group of drugs and are used for a wide spectrum of applications including relief of nervousness or tension, treatment of insomnia, muscle relaxants, treatment of panic disorder, and convulsive disorders. Triazolam is used primarily to combat insomnia on a very short-term basis. When taken for over two weeks, Triazolam usually loses its effectiveness. Side effects include difficulty in concentrating, confusion, convulsions, hallucinations, and impaired memory. In some cases Triazolam is associated with violent or self-destructive behavior.

## Ethanol

Ethanol is the most commonly used and also abused depressant. The presence of a hydrogen atom attached to the highly electronegative oxygen makes alcohol water soluble as well as fat soluble.